

AMENDMENTS TO THE DRAWINGS

Attached hereto in an Appendix are two (2) sheets of drawings to replace the drawing sheets originally filed in the application. These sheets, which include FIGS. 1 and 4, replace the original sheets that also included FIGS. 1 and 4.

REMARKS

1. In response to the Office Action mailed April 24, 2009, Applicants respectfully request reconsideration. Claims 1-11, 14, 15, 19, 21-23 and 25-54 were last presented for examination. In the outstanding Office Action, claims 1-11, 14, 15, 19, 21-23 and 25-54 were rejected. By the foregoing Amendments, claims 1, 3-11, 14, 15, 19, 21-23, 25-34 and 36-54 have been amended, claims 2 and 35 have been cancelled and no claims have been added. No new matter has been added. Upon entry of this paper, claims 1, 3-11, 14, 15, 19, 21-23, 25-34 and 36-54 will be pending in this application. Of these forty-five (45) claims, 3 claims (claims 1, 25 and 34) are independent.

2. Based upon the above Amendment and following Remarks, Applicants respectfully request that all outstanding objections and rejections be reconsidered, and that they be withdrawn.

Art of Record

3. Applicants acknowledge receipt of form PTO-892 listing additional references identified by the Examiner.

Drawings and Specification

4. The Examiner has objected to the drawings under 37 CFR 1.83(a) because the drawings allegedly do not show an “implantable medical device” as recited in the claims. Applicants submit herewith two replacement sheets illustrating an “implantable medical device.” As stated in 37 CFR 1.83(a), “features disclosed in the description and claims, where their detailed illustration is not essential for a proper understanding of the invention, should be illustrated in the drawing in the form of a graphical drawing symbol or a labeled representation (*e.g.*, a labeled rectangular box).” As such, the “implantable medical device” is illustrated as rectangular box 100 in the replacement sheets.

5. Applicants respectfully assert that no new matter has been added by the addition of “implantable medical device 100.” Specifically, Applicants specification of record discloses the use of the power management system in an implantable medical device. (*See*, Applicants’

specification, paras. [0002], [0018]; *see also* original claims 20 and 21.) Therefore, entry of the replacement sheets is respectfully requested.

6. Applicants have further amended the specification to make the specification consistent with the replacement drawings. Applicants assert that no new matter has been added, and entry is respectfully requested.

Claim Rejections under §112

7. Claims 5, 19 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which Applicants regard as the invention. The Examiner asserts that there is insufficient antecedent basis for the limitation “the second conversion means” in claims 5, 19 and 23. Applicants have corrected the dependencies of claims 19 and 23 to provide antecedent basis for the limitation “the second conversion means.” Applicants have also amended claim 5 to remove the limitation “the second conversion means” there from. As such, Applicants respectfully request that the rejections under 35 U.S.C. §112 be reconsidered, and that they be withdrawn.

Claim Rejections under §103

8. Claims 1-7, 19, 21, 25-40 and 52 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent No. 5,553,294 to Nanno et al., (hereinafter, “Nanno”) in view of U.S. Patent No. 5,814,095 to Muller et al., (hereinafter, “Muller”). Applicants respectfully request that the Examiner reconsider and withdraw these rejections for at least the following reasons. First, the Examiner has failed to provide an appropriate basis to support the proposed combination of Nanno and Muller. Second, the proposed combination is based on impermissible hindsight. Third, even if the references were combined as suggested by the Examiner, the proposed combination would still not contain all the elements of Applicants’ claims.

The Combination of Nanno and Muller is prima facie Improper

9. The proposed combination of Nanno and Muller is *prima facie* improper because the Examiner has failed to provide an appropriate basis for making the proposed combination. As

stated by the Supreme Court in *KSR International Co. v. Teleflex Inc.*, “a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently known in the prior art.” (127 S.Ct. 1727, 1741 (2007).) The Supreme Court recognized that “rejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some *articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.*” (See *KSR*, 127 S.Ct. at 1741 (citing *In re Kahn*, 441 F.3d 977, 988 (C.A.Fed. 2006); emphasis added.) Applicants submit that the Examiner has completely failed to satisfy these legal obligations. The Examiner has done what has been viewed as circumspect by the Supreme Court and has only provided a conclusory and unsupported statement to justify the proposed combination of Nanno and Muller.

10. Nanno is directed to a portable computer that is powered by a plurality of detachable batteries. (See, Nanno, Abstract; col. 1, lns. 44-67.) The computer includes a plurality of LEDs for displaying various battery states and conditions. (See, Nanno, col. 5, lns. 4-44.) For example, the computer of Nanno displays indications when a battery or AC power supply is connected to the computer, when a battery has low power, *etc.* (See, Nanno, col. 5, lns. 4-44.)

11. The computer of Nanno also comprises a power supply circuit that is connected to an AC power source and two rechargeable batteries, referred so as the left main battery and the right main battery. (See, Nanno, col. 3, ln. 54- col. 5, ln. 63.) The power supply circuit includes a charger that receives power from the AC source, and which is connected to each of the batteries by a switch (SLI, SRI). (See, Nanno, FIG. 2; col. 3, ln. 54- col. 5, ln. 63.) The left battery is permanently connected to a DC-DC converter that forwards the power supplied by the left battery to other components of the computer. (See, Nanno, FIG. 2; col. 3, ln. 54- col. 5, ln. 63.) Disposed between the right battery and the DC-DC converter is a switch (SR0). (See, Nanno, FIG. 2; col. 3, ln. 54- col. 5, ln. 63.)

12. Muller is directed to an implantable hearing aid that includes an integrated primary battery implanted in the patient. (See, Muller, col. 2, lns. 50-67.) Following discharge thereof, the battery is recharged transcutaneously from outside the patient by inductive coupling. (See,

Muller, col. 2, lns. 50-67.) Muller does not provide any further details of the primary battery or the charging thereof.

13. In the Office Action, the Examiner relies upon Nanno to disclose a power management system, but recognizes that Nanno does not disclose that the power management system is used in an implantable device. (*See*, Office Action, pg. 4.) However, the Examiner asserts that Muller discloses an “implantable hearing aid device using rechargeable batteries as [a] power supply and can be recharged transcutaneously via an external charging device.” (*See*, Office Action, pgs. 4-5.) The Examiner then concludes that it would have been obvious to one of ordinary skill in the art at the time of the invention to have to use the power management system of Nanno as the power source of an implantable hearing aid because Muller “has demonstrated that is suitable method in order to have supplied power by an on device rechargeable batteries.” (*See*, Office Action, pg. 5.)

14. Although unclear in the Office Action, Applicants believe the Examiner asserts that because Muller discloses the use of an implantable battery, it would be obvious to incorporate the power management system of Nanno into Muller. Applicants assert that this justification provided by the Examiner is a mere conclusory statement that fails to provide a rational underpinning to explain the proposed combination. Applicants further assert, as described below, that there is no rational basis for combining Nanno with Muller.

15. As explained in Applicants’ specification, there are numerous challenges with using rechargeable batteries within a patient due to the fact that a surgical procedure is required to replace the batteries. (*See*, Applicants’ specification, para. [0007].) One challenge is that “if rechargeable batteries are discharged before being fully charged or conversely charged before being fully discharged, their overall capacity may be prematurely reduced.” (*See*, Applicants’ specification, para. [0007].) As explained above, in the system of Nanno, the output of the left battery is always connected to the DC-DC voltage converter, even during the charging operation. (*See*, Nanno, FIG. 2; col. 3, ln. 54- col. 5, ln. 63.) Therefore, due to this configuration of Nanno, the left rechargeable battery is susceptible to being discharged before being fully charged. As such, the arrangement of Nanno is not suitable for implantable use because the battery life of one or more of the batteries would be undesirably shortened.

16. Applicants' specification also notes that rechargeable batteries suffer from the drawback that the batteries can only be charged a number of times. (*See*, Applicants' specification, para. [0008].) Thus, it is best to use as large of batteries as possible and to make full use of each charge. However, as noted above, the output of the left battery is always connected to the DC-DC voltage converter and is the primary battery used to supply power to the converter. This arrangement would necessarily place extra strain on the left battery, thereby causing the left battery to be discharged and subsequently recharged more frequently than the right battery. Again, this drawback reduces the life of the left battery and makes the arrangement of Nanno non-suitable for implantable use. The above drawbacks do not affect the use of Nanno's computer system because the batteries are detachable and thus replaceable with little trouble.

17. The above cited case law makes it extremely clear that without a clear, articulated reason having some rational underpinning to explain the proposed combination, an obviousness rejection under 35 U.S.C. §103 cannot be maintained. (*See KSR.*, 127 S.Ct. at 1741.) Because, as explained above, the Examiner has completely failed to provide any rational underpinning to justify the proposed combination, and because there is rational reasoning for combining Nanno and Muller, Applicants assert that the proposed combination is *prima facie* improper. Therefore, Applicants respectfully request that the rejections under 35 U.S.C. §103 be reconsidered and withdrawn.

***The Proposed Combination of Nanno and Muller
is based on Impermissible Hindsight***

18. Applicants further assert that the combination of Nanno and Muller is *prima facie* improper because the reasoning provided by the Examiner to combine the cited references is based on impermissible hindsight. As stated in Section 2142 of the Manual of Patent Examining Procedure (M.P.E.P.), the "[E]xaminer must step backward in time and into the shoes worn by the hypothetical 'person of ordinary skill in the art' when the invention was unknown and just before it was made." The Examiner must then examine the claimed invention and determine whether the invention as a whole would have been obvious to that hypothetical person. (*See*, M.P.E.P., §2142.) Although this is inherently an analysis based on hindsight, "impermissible hindsight must be avoided and the legal conclusion must be reached on the basis

of the facts gleaned from the prior art.” (See, M.P.E.P., §2142.) The Examiner must consider only the prior art, and knowledge derived from Applicants’ disclosure must be put aside in reaching this determination. (See, *In re McLaughlin*, 443 F.2d 1392, 1395 (CCPA 1971).)

19. As described above, Nanno is directed to a power supply for a portable computer that provides visual alerts to an operator. (See, Nanno, Abstract; col. 1, lns. 44-67.) There is nothing in the art of record, that would lead one of ordinary skill in the art to incorporate the power supply into the hearing aid of Muller. Such incorporation of power supply management into Muller would fundamentally expand the scope of usage of the hearing aid of Muller far beyond that contemplated in Muller, particularly since Muller only discloses a simple one battery system. Therefore, Applicants assert that the Examiner has based the proposed combination on information drawn directly from Applicants’ disclosure. Accordingly, Applicants assert that the combination of Nanno and Muller is *prima facie* improper, and that the rejections under 35 U.S.C. §103 should be withdrawn.

***The Proposed Combination Still Does not Contain
All Elements of Applicants’ Claims***

Claim 1

20. Applicants respectfully assert that even if the references were combined as proposed by the Examiner, the resulting combination would still fail to teach or render obvious all elements of Applicants’ claimed invention. Applicants’ independent claim 1 recites, in part, “a power management system configured to supply power to the output circuit comprising... switch means to selectively connect the plurality of rechargeable batteries to the first conversion means for charging of the batteries and to connect a selected one or more of the plurality of batteries to the output circuit.” (Emphasis added.) Applicants assert that Nanno fails to disclose the “switch means” of the present invention because the power supply of Nanno cannot connect a “selected one or more” of the batteries to an output circuit. Rather, as explained above, in the power supply of Nanno the left battery is permanently connected to DC-DC converter that forwards the power supplied by the left battery to other components of the computer. (See, Nanno, FIG. 2; col. 3, ln. 54- col. 5, ln. 63.) Therefore, the switch SR0 of Nanno is limited to

connecting only the single right battery to the DC-DC converter, and cannot connect a “selected one or more of the plurality of batteries to the output circuit” as recited in claim 1.

21. Applicants further assert that Muller fails to teach that which is missing from Nanno. Therefore, for at least these additional reasons, Applicants assert that claim 1 is patentable over the combination of Nanno and Muller. Accordingly, Applicants respectfully request that the rejection of claim 1 under 35 U.S.C. §103 be reconsidered, and that it be withdrawn.

Claim 25

22. Claim 25 is directed to a “method of managing the supply of power to an output circuit of an implantable medical device... comprising the steps of: selectively connecting, using switch means, the plurality of rechargeable batteries to the input voltage converter circuit to charge the plurality of batteries; connecting a selected one or more of the plurality of rechargeable batteries, using the switch means, to the output circuit.” (*See*, Applicants’ claim 25, above.) For at least the reasons discussed above with reference to claim 1, Applicants assert that the combination of Nanno and Muller fails to teach all elements of claim 25. As such, Applicants respectfully request that the rejection of claim 25 under 35 U.S.C. §103 be reconsidered, and that it be withdrawn.

Claim 34

23. Claim 34 is directed to an implantable medical device comprising “a power management system configured to supply power to the output circuit comprising... a switch matrix configured to selectively connect the plurality of rechargeable batteries to the input voltage converter circuit for charging of the batteries and to connect a selected one or more of the plurality of batteries to the output circuit.” (*See*, Applicants’ claim 34, above.) For at least the reasons discussed above with reference to claim 1, Applicants assert that the combination of Nanno and Muller fails to teach all elements of claim 34. As such, Applicants respectfully request that the rejection of claim 34 under 35 U.S.C. §103 be reconsidered, and that it be withdrawn.

Additional Rejections

24. The Examiner has also rejected claims 8, 9, and 41-42 under 35 U.S.C. 103(a) as being obvious over Nanno in view of Muller in further view of U.S. Patent No. 6,541,980 to Maki, (hereinafter, "Maki"). Similarly, claims 10-11, 14-15, 43-51 are rejected under 35 U.S.C. 103(a) as being obvious over Nanno in view of Muller in further view of Maki in further view of U.S. Patent No. 6,891,438 to Arai, (hereinafter, "Arai"). Furthermore, the Examiner has rejected claims 22 and 53 under 35 U.S.C. §103(a) as being obvious over Nanno in view of Muller in further view of U.S. Patent No. 5,635,814 to Afzal, (hereinafter, "Afzal"). Finally, the Examiner has rejected claims 23 and 54 under 35 U.S.C. §103(a) as being obvious over Nanno in view of Muller in further view of U.S. Patent Publication No. 2004/0095020 to Kernahan et al, (hereinafter, "Kernahan"). Without addressing the apparent lack of motivation to combine these references with the combination of Nanno and Muller, Applicants assert that these rejections are improper for at least the reasons discussed above. Specifically, Applicants assert that the combination of Nanno and Muller fail to disclose that which is asserted by the Examiner. Therefore, Applicants respectfully request that these additional rejections be withdrawn.

Dependent claims

25. The dependent claims incorporate all the subject matter of their respective independent claims and add additional subject matter which makes them independently patentable over the art of record. Accordingly, Applicants respectfully assert that the dependent claims are also allowable over the art of record.

Conclusion

26. In view of the foregoing, Applicants respectfully submit that this application is now in condition for allowance. A notice to this effect is respectfully requested.

27. Applicants make no admissions by not addressing any outstanding rejections or basis of rejections. Furthermore, Applicants reserve the right to pursue any cancelled claims or other subject matter disclosed in this application in a continuation or divisional application. Thus, cancellations and amendments of above claims, are not to be construed as an admission regarding the patentability of any claims.

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Respectfully submitted,

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APPENDIX 1